

Notice of Allowability**Application No.**

10/534,899

Examiner

LAM P. PHAM

Applicant(s)

COHEN, PHILLIP ALBERT

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Examiner Amendment.
2. ☒ The allowed claim(s) is/are 1-5,7-10,12 and 14.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☒ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Brad Spencer on February 5, 2009.

The application has been amended as follows:

In claim 5, lines 15: insert "annularly" between "mounted" and "on a rotatable rim".

Allowable Subject Matter

2. Claims 1-5, 7-10, 12 and 14 (Renumbered as 1-11) are allowed.
3. The following is an examiner's statement of reasons for allowance:

In the field of tire monitoring system comprising a wheel mounted sensor means transmitting tire data through a two-wire electromagnetically coupled channel to a chassis mounted reader, there is no reference in prior art fairly teach or suggest a system comprising an electromagnetic coupling means adapted to have constant mutual inductance for all stationary or rotating positions of the tire and to simultaneously supply power to the sensor means and receive the data for processing, wherein the sensor means includes a sensor coil that is mounted annularly on a rim of the wheel and is coiled around a first axis, and the reader means includes a receiver coil that is

coiled around a second axis that is non-coincident with the first axis in the manner claimed in claim 1.

In the field of tire monitoring system comprising a wheel mounted sensor means transmitting tire data through a two-wire electromagnetically coupled channel to a chassis mounted reader, there is no reference in prior art fairly teach or suggest a two-wire communication channel includes a sensor coil mounted annularly on a rotatable rim for the wheel and a receiver coil mounted on a non-rotating component of a hub for the wheel, the sensor coil and the receiver coil being adapted to maintain a constant mutual inductance therebetween during a complete rotation of the wheel, the sensor and receiver coils providing a non-contacting, two wire communication channel for the data monitoring system, wherein the sensor coil is coiled around a first axis and the receiver coil is coiled around a second axis that is non-coincident with the first axis in the manner claimed in claim 5.

In the field of tire monitoring system comprising a wheel mounted sensor means transmitting tire data through a two-wire electromagnetically coupled channel to a chassis mounted reader, there is no reference in prior art fairly teach or suggest an electromagnetic coupling interconnection comprising a first part mounted on a rotatable rim of the wheel and adapted to receive the data from a sensor means, and a second part mounted on a non-rotating component of a hub for the wheel, the second part being adapted to maintain a constant air gap distance with the first part when the wheel is mounted on the hub so as to maintain constant mutual inductance between the first part and the second part for allowing the data to be transmitted from the first part to the

second part, wherein the first part includes a sensor coil that is mounted annularly on the rim and that is coiled around a first axis, and the second part includes a receiver coil that is coiled around a second axis that is noncoincident with the first axis in manner claimed in claim 7.

In the field of tire monitoring system comprising a wheel mounted sensor means transmitting tire data through a two-wire electromagnetically coupled channel to a chassis mounted reader, there is no reference in prior art fairly teach or suggest a two-wire communication channel including electromagnetic transforming means, wherein a first part of the electromagnetic transforming means is mounted annularly on a rim of the wheel and a second part of the electromagnetic transforming means is mounted on a non-rotating component of a hub for the wheel, the first and second parts being divided by an air gap and providing a non-contacting, two wire communication channel for the data monitoring system, wherein the second part comprises a receiver coil mounted on the non-rotating component of the hub for the wheel, and the first part comprises a sensor coil so mounted annularly on the rim of the wheel as to maintain a constant and sufficiently proximate distance to the receiver coil during rotation of the wheel for electromagnetic induction to occur, and the sensor coil is coiled around a first axis and the receiver coil is coiled around a second axis that is noncoincident with the first axis in the manner claimed in claim 9.

In the field of tire monitoring system comprising a wheel mounted sensor means transmitting tire data through a two-wire electromagnetically coupled channel to a chassis mounted reader, there is no reference in prior art fairly teach or suggest an

electromagnetic coupling in a two-wire communication channel comprising a first part mounted annularly on a rim of a wheel of the vehicle, and a second part mounted on a non- rotating component of a hub for the wheel, the first part and the second part being adapted to maintain electromagnetic induction therebetween during rotation of the wheel for the transmission of decodable data for the tire from a sensor means to a reader means, the second part comprises a receiver coil mounted on the non-rotating component of the hub for the wheel, and the first part comprises a sensor coil so mounted annularly on the rim of the wheel as to maintain a constant and sufficiently proximate distance to the receiver coil during rotation of the wheel for electromagnetic induction to occur, and wherein the sensor coil is coiled around a first axis and the receiver coil is coiled around a second axis that is noncoincident with the first axis manner claimed in claim 10.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
5. Hosaka et al. (US 3881170) disclose a wheel rim mounted coil for transformer.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LAM P. PHAM whose telephone number is (571)272-2977. The examiner can normally be reached on 10AM-7PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, BENJAMIN C. LEE can be reached on 571-272-2963. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

February 5, 2009

Lam P Pham
Examiner
Art Unit 2612

/Benjamin C. Lee/
Supervisory Patent Examiner, Art Unit 2612